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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,806	04/09/2004	Chung-Shih Tang	0088523-001US0	9054

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EXAMINER

HAYES, KRISTEN C

ART UNIT	PAPER NUMBER
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3643

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/821,806	Applicant(s) TANG ET AL.	
	Examiner KRISTEN C. HAYES	Art Unit 3643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 20-26, 29 and 30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 20-26, 29 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 10-14, 24-26 and 29, 30 rejected under 35 U.S.C. 103(a) as being unpatentable over Murray US 4,888,912 (previously cited) in view of Hinman (article entitled "Salt water could be key to greener world").

3. Regarding claim 1, Murray discloses a plant cultivation system comprising a plant (Murray, Figure 1) support comprising a flexible buoyant portion (10) and a plant (6) in contact with the plant support (Murray, column 2: lines 41-42), wherein the plant support is buoyant in the saline water (Murray, column 1: line 13) and wherein at least one portion of the plant contacts the saline water (Murray, column 2: lines 53-55). Not disclosed is the plant being a salt-tolerant terrestrial plant. The examiner takes official notice that hydroponics, growing terrestrial plants with little or no soil and water and growing terrestrial plants in floating hydroponics systems are known in the art (evidenced by US 6,086,755; US 2003/0049392). Hinman teaches salt tolerant terrestrial plants and irrigating salt tolerant plants with salt water. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the plant support of Murray to cultivate the salt-tolerant terrestrial plant of Hinman as a simple substitution of one known element for another in order to provide the predictable result of farming hydroponically with salt water.

4. Regarding claim 2, Murray in view of Hinman further discloses the saline water being seawater (Murray, column 1: line 13).

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5. Regarding claim 3, Murray in view of Hinman further discloses the saline water being in the open ocean (Murray, column 1: line 13).

6. Regarding claim 4, Murray in view of Hinman further discloses the saline water comprising phosphorous, nitrogen and potassium (in that these elements are inherent in ocean water). Murray also recognizes that lake waters contain nitrates, phosphates and organic pollutants (Murray, column 1: lines 22-24, lines 49-57). One of ordinary skill in the art would recognize that it is possible to have the same contaminants in ocean water and lake water.

7. Regarding claim 5, Murray in view of Hinman discloses the device of claim 1 but does not disclose a metal ion contaminant in the sea water. However, the examiner takes official notice that metal ion contaminants exist in ocean water and that planting cultivation systems similar to device of Murray are used in metal ion contaminated sea water. It would have been obvious to one of ordinary skill in the art at the time of the invention for the saline water to contain metal ion contaminants as to use the plants of the device to filter and clean the water.

8. Regarding claim 6, Murray in view of Hinman further discloses the plant support comprising a sheet material (10) in contact with a buoyant edge or frame (12).

9. Regarding claim 10, Murray in view of Hinman further discloses the sheet being capable of being suspended at or near a surface of a body of saline water and wherein at least one buoyant support member is in contact with the sheet (in that the sheet is a buoyant support).

10. Regarding claim 11, Murray in view of Hinman further discloses the at least one buoyant support member forms a supporting structure for the cultivation system (Murray, Figure 1).

11. Regarding claims 12 and 13, Murray in view of Hinman further discloses the buoyant support member and sheet comprising plastic (Murray, column 2: line 48).

12. Regarding claim 14, Murray in view of Hinman further discloses a space for growth of a terrestrial plant is present in a region between two buoyant support members (12).

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13. Regarding claim 24, Murray in view of Hinman further discloses the salt-tolerant terrestrial plant comprises plant material, and further wherein at least one plant is grown from the plant material while the cultivation system is afloat in the saline water (Murray, column 4: lines 53-56).

14. Regarding claim 25, Murray in view of Hinman further discloses the plant material being a whole plant (6).

15. Regarding claim 26, Murray in view of Hinman further discloses the plant material contacting the saline water by irrigation and direct contact (Murray, column 2: lines 53-55).

16. Regarding claim 29, Murray in view of Hinman discloses the device of claim 1 further discloses the plant being *Salicornia* (Hinman, ¶03). As per applicant's admission in [¶004], not disclosed is the *Salicornia* being the specific species *Salicornia* spp. *Salicornia* spp. is a well known crop (evidenced by Jagtap et al.: "Ecological Observations On Major *Salicornia* Beds From Highly Saline Coastal Wetlands of India," Introduction: ¶02). It would have been obvious to one of ordinary skill in the art to have the species of *Salicornia* of Murray in view of Hinman be *Salicornia* spp. depending on the type of crop desired by the user.

17. Regarding claim 30, Murray in view of Hinman further discloses the plant being a cultivated crop plant (in that the plants are cultivated and harvested) (Murray, column 4: lines 53-56).

18. Claims 1, 7-9 and 20-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer US 2,175,113 in view of Hinman ("Salt water could be key to greener world").

19. Regarding claim 1, Fischer discloses a plant cultivation system comprising a plant (16) support comprising a flexible buoyant portion (11 or 12 and 13) and a terrestrial plant (Fischer, column 2: lines 30-33) (16) in contact with the plant support (Fischer, Figures 2-5), wherein the plant support is buoyant (Fischer, column 1, line 16) in water and wherein at least one portion of

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the plant contacts the water (Fischer, column 1: lines 31-32). Not disclosed is the water being salt water or the plant being salt-tolerant. Hinman teaches salt tolerant terrestrial plants and irrigating salt tolerant plants with salt water. It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute a salt-tolerant terrestrial plant in salt water with the plant cultivation system of Fischer, as taught by Hinman, as the salt water being more dense than freshwater would allow the device of Fischer to float easier and as a simple substitution of one known element for another in order to provide the predictable result of hydroponically farming a salt-tolerant plant with salt water.

20. Regarding claim 7, Fischer in view of Hinman further discloses the plant support comprising a growth medium (Fischer, column 2: line 30).

21. Regarding claim 8, Fischer in view of Hinman further discloses the growth medium is at least partially contained in a housing (in that the growth medium being on film (17) would be contained by the walls of the perforations formed in the buoyant portion).

22. Regarding claim 9, Fisher in view of Hinman further discloses the buoyant portion being the housing (see claim 8).

23. Regarding claim 20, Fischer in view of Hinman further discloses at least one growth medium (Fischer column 2: line 30) wherein the growth medium comprises at least plant (16) and at least one buoyant support member (11 or 12 and 13) supporting the growth medium (see claim 8).

24. Regarding claim 21, Fischer in view of Hinman further discloses the growth medium comprising soil (Fischer, column 2: line 30).

25. Regarding claim 22, Fischer in view of Hinman further discloses the growth medium being contained in a housing (combination of 17-19) comprised of netting (Fischer, column 2: line 15).

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26. Regarding claim 23, Fischer in view of Hinman further discloses an evaporation protective layer being provided at a surface above the growth medium (in that the surface of (11) or (12) is above and partially encloses the growth medium) *to inhibit contact of the growth medium with air.*

Response to Arguments

27. Applicant's arguments filed 07/15/2009 have been fully considered but they are not persuasive. Please see previous responses to arguments.

28. Murray is still seen as disclosing a plant support comprising a flexible buoyant portion. A general definition of buoyant is "capable of floating". The flexible buoyant portion of Murray (10) is capable of floating, if not by itself than by the overall buoyancy of the system, or by the floats (12).

29. Murray is still seen as disclosing a plant support (2) which is buoyant in saline water.

30. As to the cork of Fischer not being flexible, cork is generally considered a flexible material. It is also noted that the degree of flexibility of the buoyant portion is not claimed. Cork is therefore seen as being flexible.

31. Hinman is used to teach salt-tolerant plants that are grown with salt water and could be farmed with the system of Murray.

32. The support of Fischer is seen as capable of supporting a terrestrial plant. The cloth or film of Fischer would support the plant adequately. As to Fischer not teaching plant cultivation because it teaches cultivating a seed; in the instant application, a seed is seen as plant material (claims 24, 25).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KRISTEN C. HAYES whose telephone number is (571)270-3093. The examiner can normally be reached on Monday-Thursday, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on (571)272-6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KCH/
Examiner, Art Unit 3643

/Rob Swiatek/
Primary Examiner, Art Unit 3643
20 November 2009